VARIETIES OF FRUIT FOR NEW YORK

CORNELL EXTENSION BULLETIN 733

Contents

Varieties of Fruit for New York

THIS list of fruit varieties has been compiled as a guide in the selection of fruit for plantings. An attempt has been made to name and describe the more important varieties adapted to New York State. At present the variety picture for apples and other fruits is changing. A number of the older sorts are being discarded and many new varieties are gaining in popularity.

The varieties in boldface type (black) are those that have been most widely planted and that are at present important commercially. The varieties starred (*) are those that should have precedence in planting for the general market. Other varieties in italics (light) are old standards of value under special conditions or for special uses and new varieties that appear to have real value for the commercial grower or the home fruit grower of the State. The newer varieties of greatest promise and most deserving of extensive trial are marked with a dagger (†).

The grower interested in trying the newest introductions should supplement this list with the catalog of the New York State Fruit Testing Association, Geneva, New York.

More detailed information in regard to specific varieties may be obtained by writing to the New York State Agricultural Experiment Station at Geneva or to the New York State College of Agriculture at Ithaca.

Apples

Rootstocks

Apple varieties are usually propagated in the United States by grafting or budding on apple-seedling rootstocks. Trees on such stocks eventually reach large size and are referred to as "Standard Size trees." In recent years, however, considerable interest has been shown in rootstocks that control the size of the resulting trees. By selecting the appropriate stock, such as those in the East Malling series, it is possible to have trees of definitely smaller size at maturity. Some of these stocks also induce early bearing, and some of them may be more suitable for certain soil conditions than seedling stocks.

Specific information about size-controlling stocks is available from the New York State Agricultural Experiment Station at Geneva, New York.

Pollination

In the Northeast, apples are usually considered to be self-unfruitful and hence require cross-pollination. Even varieties that are partially self-fruitful are more dependable croppers when planted in mixed plantings with other varieties.

Several of our important varieties, including Baldwin, Rhode Island Greening, Gravenstein, and Webster, are triploids and produce poor pollen which is of little value in pollination. For effective cross-pollination, a variety should be within 100 feet of its pollinator and in commercial practice the minimum requirements are met if every fifth row is a pollinator when the trees are planted 40 by 40 feet apart. Varieties chosen for a commercial planting should effectively pollinate each other; to do this, there must be enough overlapping of their blooming seasons and they should be varieties that bloom annually. If triploid varieties are planted, at least two other pollinating varieties must be included in the planting to pollinate each other as well as the triploid.

Further specific information on pollination is given in Cornell Extension Bulletin 720, *Pollination of Fruit Trees.*

Red Sports

Most of the standard apple varieties have color mutations and growers usually prefer these better colored types. McIntosh, Delicious, and Rome Beauty appear to have a high mutation rate insofar as color is concerned, and many color sports of these varieties are available. Some of these sports are superior in color to the original varieties; some, particularly certain color sports of Delicious, Jonathan, and Stayman, may be too dark and may not have acceptable color appeal under some conditions.

In most cases, color mutations appear to be identical in other respects to the varieties from which they mutated. With some color mutations, however, it is possible that other changes took place along with the change in color. In choosing color forms, therefore, the grower must realize that he is taking a chance on variation in characters other than color, and he should obtain the most recent information from available sources before planting.

In recent years, several early coloring mutations have appeared in older color sports, particularly in color sports of Delicious. Red King, Chelan Red, and Earlired are early coloring sports of Starking, and Royal Red is an early coloring sport of Richared. They are now being offered by nurserymen. These sports are described as being similar to the varieties from which they

mutated except that they develop color earlier. At harvest, even the fruit in the inner portions of the tree has good color. In districts where good color is not common in Delicious, Richared, or Starking, these new early coloring mutations may be worthy of a trial planting. Usually these new varieties do not mature earlier than the older strains, and the danger of picking them too early before they have developed good quality should be kept in mind. A color mutation of Delicious, known as Red Delicious (Vance) does, however, mature about 5 to 6 days earlier than Delicious, while Red Delicious (Bridgham) matures from 4 to 6 days later than Delicious.

Variety Notes

The varieties are listed alphabetically. The order and dates of ripening, pollen viability, blooming season, and other specific information is included in the variety chart on page 7.

Baldwin. An old variety that still comprises from 15 to 20 per cent of all apples produced in western New York. Has many faults, particularly lack of winter hardiness, and is a distinct biennial bearer. Is being replaced by more dependable varieties.

***Cortland.** Dark red streak, with heavy bloom. Fruit is large and has white flesh that is very slow to discolor when exposed to air. For this reason it has been referred to as the "salad apple." The tree is hardy, annually productive, and the fruit hangs to the tree well. For best storage quality, Cortland should be picked with or immediately after McIntosh. It is in season from October to February.

***Delicious.** When well colored, Delicious is attractively striped with red but in some areas it often lacks size and quality. The fruit is characteristically long conic and has a distinct "crown" of five protuberances on the blossom end. Delicious is specifically a dessert apple and when well grown has high quality, though mildly flavored, and has crisp juicy flesh.

Red Sports, such as Starking, Richared, Red Delicious (Bridgham), and Shotwell Delicious, all develop high color and are usually preferred to the regular Delicious. The Red Delicious (Vance) resembles Starking in appearance but matures earlier.

Early McIntosh. Medium sized, McIntosh type that ripens during the latter part of August. It has found favor as an early dessert variety, although it is definitely a biennial cropper and requires heavy thinning to attain adequate size.

***Golden Delicious.** Attractive golden yellow; medium in size and of excellent quality for both dessert and culinary purposes. Bears early and usually biennially unless blossom thinned.

Table 1. Varieties by Districts in Order of Maturity*

Consult variety chart (page 7) for details

District	Established varieties	Varieties of promise	Varieties for special uses
Western New York		Wellington	
	Lodi		
		Melba	
	Early McIntosh		
	Milton		
	Wealthy		
		Webster	
	McIntosh		Kendall
	Cortland		Twenty Ounce
	Macoun	Spartan	
	R. I. Greening		
	Delicious		Sweet Delicious
	Golden Delicious	Monroe	Newfane
	Northern Spy	Idared	
	Rome Beauty		
Hudson Valley		Wellington	
	Lodi		
		Melba	
	Early McIntosh		
	Milton		
	McIntosh		
	Cortland		
	Macoun	Spartan	
	R. I. Greening		Sweet Delicious
	Delicious		
	Golden Delicious	Idared	Newfane
	Rome Beauty		
Champlain Valley and Northern New York	Early McIntosh	Wellington	
	Wealthy		
	McIntosh		
	Cortland		
	Macoun	Spartan	
		Idared	

* Although commercial quantities of Northern Spy and Delicious are being grown in the Champlain Valley, they are not sufficiently hardy to warrant general recommendation for that area.

Table 2. Apple Variety Characteristics

Variety (in order of maturity)	Bloom season	Pollen viability	Tree type	Tendency to annual bearing	Average harvest date	Refrigerated storage season	Flavor	Size	Texture	Chief uses	Rating for processing
Lodi	E M	Good	U.spr.	Weak	Aug. 5–8	.....	Acid	M–L	Med.firm	Ea.culinary	Good—sauce and pies
Wellington	E M	Good	U.spr.	Strong	Aug. 8–10	.....	S A	L	Med.firm	Ea.culinary	Excellent—sauce
Melba	E M	Good	U.spr.	Moderate	Aug. 15–20	.....	S A	M–L	Soft	Dessert	Fair—sauce
Ea. McIntosh	L M	Good	U.spr.	Weak	Aug. 23	.....	Mild S A	S–M	Med.firm	Dessert	Fair—sauce
Milton	M	Good	U.spr.	Moderate	Sept. 10–15	Sept.–Oct.	Acid	M	Soft	General purpose	Fair—sauce
Wealthy	L M	Good	U.spr.	Weak	Sept. 12–18	Sept.–Mar.	S A	S–M	Soft	General purpose	Good—sauce
Webster	M	Poor	U.spr.	Strong	Sept. 23	Sept.–Dec.	Acid	L	Med.firm	Culinary	Excellent—sauce and pies
McIntosh	E M	Good	V.spr.	Strong	Sept. 25	Oct.–Feb.	S A	M–L	Soft	Dessert	Fair—sauce
Cortland	L M	Good	Spr.	Strong	Sept. 27	Oct.–Feb.	S A	M–L	Soft	Dessert and salad	Fair—sauce
Kendall	M	Good	Upr.	Strong	Sept. 30	Oct.–Feb.	S A	L	Med.firm	Dessert	Fair—sauce
Twenty Ounce	M	Good	Upr.	Moderate	Oct. 1	Oct.–Dec.	S A	L	Med.firm	Culinary	Good—sauce
R.I. Greening	M	Poor	V.spr.	Moderate	Oct. 5	Oct.–Feb.	S A	L	Firm	Culinary	Excellent—sauce and pies
Macoun	L M	Good	Upr.	Weak	Oct. 5	Oct.–Feb.	Mild S A	M	Soft	Dessert	Good—sauce
Spartan	M	Good	U.spr.	Moderate	Oct. 5	Oct.–Apr.	Mild S A	M	Firm	Dessert	.....
Delicious	M	Good	Upr.	Strong	Oct. 10	Oct.–Mar.	Mild	M–L	Firm	Dessert	Poor
Newfane	M	Good	U.spr.	Moderate	Oct. 10	Oct.–Mar.	Mild	M–L	Firm	Dessert	Poor
Monroe	M	Good	U.spr.	Strong	Oct. 12	Oct.–Mar.	S A	M–L	V.firm	General purpose	Excellent—sauce and pies
Baldwin	M	Poor	U.spr.	Weak	Oct. 15	Oct.–Mar.	S A	M–L	Firm	Culinary	Excellent—sauce and pies
Golden Delicious	L M	Good	U.spr.	Weak	Oct. 18	Oct.–Apr.	S A	M	Firm	General purpose	Excellent—sauce
Idared	M	Good	U.spr.	Strong	Oct. 16	Oct.–Apr.	S A	M–L	Firm	General purpose	Good—sauce
Northern Spy	L	Good	Upr.	Moderate	Oct. 20	Oct.–May	S A	M–L	V.firm	General purpose	Excellent—sauce and pies
Rome Beauty	L	Good	U.spr.	Strong	Oct. 23	Oct.–May	S A	M–L	V.firm	Culinary	Fair—sauce and pies

M = midseason and medium; E M = early midseason; L M = late midseason; L = large; S A = subacid; V.spr. = very spreading; Upr. = upright; U.spr. = upright spreading; L = late; S = small.

Requires a high humidity storage to prevent shrivelling. Some baby-food processors rate this variety very high as it may be processed with the skins on without imparting any undesirable color to the sauce.

† *Idared.* A comparatively new variety from Idaho, resulting from the cross Jonathan × Wagener. An attractive medium-red apple of good size and good quality for both dessert and processing. Its main value in the Northeast will probably be as a late-keeping dessert apple and it is worthy of extended trial.

Kendall. An attractive McIntosh type that should be picked with or just after McIntosh. Heavy annual cropper; handles better than McIntosh. Fair quality, but despite this it is finding favor with some growers because of its fine appearance, productiveness, and dependability.

Lodi. Attractive light green or pale yellow. Ripens a few days after Yellow Transparent and has largely replaced that variety as an early general purpose variety. An excellent early pie and sauce apple which ships and keeps much better than Yellow Transparent.

Macoun. Very dark-red variety; excellent dessert quality. Produces biennially unless blossom thinned. Usually sells for premium prices after its quality becomes known. Trees are upright and difficult to train but are very productive when properly handled.

Melba. An early, high-quality McIntosh type. Excellent for local markets, roadside stands, and home gardens. Ripens unevenly. Red Melba is a color sport of Melba and is usually preferred.

° **McIntosh.** The standard dessert variety in the Northeast. Very hardy and productive. Fruit is handsome; good dessert quality. Some processors use it for baby-food processing but it is usually looked upon with disfavor by processors. Probably the most dependable variety for the Northeast.

Milton. Very handsome, high-quality McIntosh type that matures about 2 to 3 weeks before McIntosh. It is finding favor in the Hudson Valley, particularly for roadside stands and local markets.

† *Monroe.* A comparatively new variety that is being planted in commercial quantities. Particularly valuable as a processing variety (sauce, canning, and frozen slices), although it also has acceptable dessert quality. A heavy, annual cropper. In appearance it is a solid dark red, somewhat resembling Jonathan in color and shape.

Newfane. Very attractive, productive, Delicious type. In quality, Newfane is not quite so high as Delicious and it is recommended for trial only in areas where Delicious does not perform well.

Northern Spy. When well grown, has exceptionally fine quality for both dessert and for processing. Unfortunately, because it is not a heavy yielder and because of its susceptibility to a physiological disorder known at Bitterpit it is losing favor with commercial growers. Home gardeners are showing some interest in it on dwarfing or semi-dwarfing rootstocks. On dwarfing rootstocks it will bear at 5 to 6 years of age as compared with 10 to 12 years on seedling or standard rootstocks. It is recommended for planting only where a grower is willing to accept comparatively light average crops in exchange for high quality.

° **Rhode Island Greening.** Standard green apple for New York. One of the best processing varieties. Bears early and trees attain large size at maturity. Very productive, although there is some tendency toward biennial bearing.

°**Rome Beauty.** Large, attractive, culinary type of only fair quality. Bears early and produces heavy annual crops. In some seasons it does not mature well in western New York. A good pollinator for late-blooming varieties. There are many desirable color sports of Rome Beauty. Some of the best clones for New York State are Red Rome (Clifton), Red Rome (Dalzell), Red Rome (Mills), and Gallia Beauty.

† *Spartan.* A comparatively new McIntosh type. Medium to large in size; very attractively colored, being solidly red blushed. Excellent dessert quality. May have value where a McIntosh type is wanted to follow McIntosh in season. Requires a stop-drop spray.

Sweet Delicious. A winter sweet apple. Has limited commercial value but is probably the best of the late sweet varieties.

Twenty Ounce. One of the largest varieties. A good processor, particularly for sauce. Tree is subject to sun scald and collar rot.

Wealthy. When well colored is quite attractive. Lost commercial favor because of its distinct biennial bearing habit and because of the tendency to produce small-sized fruit on older trees. It responds well, however, to chemical thinning which somewhat minimizes the faults noted above. Color sports are also available.

† *Webster.* A very large, attractive, red-streaked variety that is finding commercial favor. Heavy annual cropper, excellent for pies, sauce, and baking. Probably the best fall processing variety.

† *Wellington.* A new early variety. Has commercial possibilities as it is productive, large, attractively red striped, and matures its fruit evenly. An excellent early, general-purpose variety that shows promise as an early processor, particularly for sauce manufacture.

Crab Apples

CRAB apples are used primarily for jellies and pickling. Commercially they are not important, but some growers find enough demand to warrant maintaining a few trees.

Varieties

There are relatively few good crab-apple varieties. The following are probably the best for New York State.

Hyslop. The most widely planted variety. It is large, very attractive, dark purplish red, and has a heavy bloom. One of the best for jelly. Season is September and October, although they may be stored till Christmas. Trees are somewhat biennial in habit, but despite this Hyslop is probably the best commercial variety grown.

Dolgo. An excellent variety for home use but is too early for commercial processing as crab apples are usually processed later in the season. It is a very handsome, bright red color. The fruit is somewhat small, and it makes a fine flavored and beautifully colored jelly. It is also recommended for canning where its small size is an advantage over the larger varieties.

Unlike Hyslop, however, it breaks down quickly in storage. Dolgo trees are beautiful as ornamentals both in flower and when carrying a crop of fiery red fruit. Season—early September.

Young America. A large, handsome bright red variety of excellent quality. Makes a red-colored jelly of fine quality. Young America, although it blooms heavily, does not set the heavy crops of Dolgo and Hyslop, and frequently the fruit is too large for canning. The tendency to mature unevenly is not too important for the home orchard but this would be considered as a fault in commercial plantings. Season—mid-September.

Pears

CROSS-POLLINATION is important in the successful culture of pears. Mixed plantings of at least two compatible varieties are required. Bartlett and Seckel will not successfully pollinate each other. Alexander Lucas produces poor pollen. Early and medium-, or medium- and late-blooming varieties pollinate each other, but not early and late varieties. With these exceptions, the varieties listed successfully pollinate each other.

The varieties are described in order of ripening, with the average season of first ripening at Geneva given for each variety. The ripening season would be somewhat earlier in the southern parts of the State. The date listed is not the picking date. Pears are normally picked when they reach full size and separate easily from the spur. They develop the best quality when ripened off the tree.

Tyson. Ripe in late August, short season; fruit, medium size, pyriform, clear yellow color, flesh slightly granular around the core, juicy, sweet, good quality; tree quite productive, vigorous, somewhat blight-resistant, blooms in midseason. Recommended for the home orchard.

* **Clapp Favorite.** Ripe in early September, short season; fruit large; pyriform, attractive yellow blushed red; flesh slightly granular at the core, juicy, melting, sweet, good quality; tree productive, vigorous, blight-susceptible, blooms late. This is the earliest pear that is planted commercially.

* **Bartlett.** Ripe the second week in September, short season unless stored in cold storage; fruit large when well grown, pyriform, attractive yellow color; flesh smooth textured, juicy, melting, sweet, good flavor, good quality; tree productive, medium vigor, very blight susceptible, blooms midseason. This variety is the one most widely grown in the State and is used for fresh fruit, baby food, and canning.

Flemish Beauty. Ripe in mid-September, rather short season; fruit large, pyriform with a thick neck, yellow with red blush; flesh juicy, melting, smooth, sweet spicy flavor, good quality; tree productive, vigorous, very hardy, susceptible to fire blight and very susceptible to pear scab, blooms early. This variety can be grown outside of the regular fruit growing areas of the State because of its hardiness.

† *Maxine.* Ripe last week in September, season about three weeks; fruit large, pyriform, bright yellow; flesh slightly coarse, juicy, sweet mild flavor, fair quality; tree productive, vigorous, blight resistant, blooms midseason. Where fire blight is particularly severe, this variety has the best quality of the resistant varieties.

* *Gorham.* Ripe the last week in September, long season in cold storage; fruit large to medium size, pyriform, yellow; flesh melting, juicy, slightly granular at the core, sweet, pleasant flavor, good quality; tree productive, vigorous, susceptible to fire blight. This is a good Bartlett type pear to follow Bartlett. It should be maintained in a vigorous condition for best production and fruit size.

† *Ewart.* Ripe in late September, keeps until December in storage;

fruit large, pyriform, dull yellow covered with russet; flesh slightly granular at the core, melting, juicy, sweet, good flavor, good quality; tree productive but tends to alternate bearing, susceptible to fire blight; blooms midseason.

Sheldon. Ripe in early October, fairly long season, fruit medium size, turbinate, russet; flesh smooth, melting, juicy, sweet, slightly perfumed flavor, good quality; tree not very productive and late in coming into bearing, susceptible to blight, blooms midseason. An old dessert variety for home use.

Seckel. Ripe first week in October, in season until November; fruit small pyriform, attractive brown with red cheek; flesh smooth, melting, juicy, sweet, spicy, the best quality pear; tree productive but late in coming into bearing, somewhat blight resistant, blooms midseason. An old favorite for the home orchard because of its high quality.

† *Alexander Lucas.* Ripe in mid-October, keeps until December; fruit large, pyriform, attractive yellow; flesh smooth, juicy, melting, sweet mild flavor, fair quality; tree productive, annual bearer, susceptible to blight, blooms midseason but will not pollinate other varieties.

† *Dumont.* Ripe in third week of October, keeps until December; fruit large to medium, pyriform, attractive yellow with red blush; flesh smooth, juicy, melting, sweet, good quality, rich flavor; tree only moderately productive, blight susceptible, blooms midseason. An attractive high-quality variety for the home orchard.

• **Bosc.** Ripe about the end of October, long season; fruit large, pyriform, yellowish and russet; flesh smooth, juicy, melting, sweet, rich flavor, high quality; tree productive, very susceptible to fire blight, blooms midseason. A commercial variety in spite of its susceptibility to blight.

Peaches

PEACHES grown in New York State are mostly of the yellow melting flesh type such as Elberta. They are sold as fresh fruit on local and distant markets or to canners. White, melting flesh varieties are also available, but few of these are grown commercially in New York State. A few are grown by home gardeners who prefer the flavor of the white-fleshed peaches.

A succession of varieties of peaches that gives a season of eight weeks or more is now available. The varieties listed below are named in order of ripening and are compared with Elberta, which is the most widely grown variety in

the State. The season of ripening, expressed as the number of days before or after Elberta, is not always constant, as a number of factors may influence the time a peach ripens. These figures, however, serve as a guide in the selection of varieties. All in this list are self-fruitful.

Erlyvee. Ripe seven weeks before Elberta; fruit small, oval, yellow with the exposed cheek blushed red; flesh soft, smooth, juicy, good flavor and quality, semi-clingstone; tree vigorous, productive, requires early and heavy thinning, hardy. The skin of this variety is very tender and will not stand handling so Erlyvee is of value only for home use or roadside stands in small containers.

† *Dixired.* Ripe 5½ weeks before Elberta; fruit medium to large, round, highly colored; flesh firm, slightly coarse, sweet, mild flavor, good quality, semi-clingstone; tree vigorous, productive, less hardy than Elberta. This variety promises to become an important commercial variety where there is little danger of winter injury.

Prairie Dawn. Ripe five weeks before Elberta; fruit medium size, roundish, yellow striped and splashed with red; flesh medium firm, slightly coarse, good flavor and quality, clingstone; tree very productive, very hardy. While this variety is not quite the equal of some other varieties, its hardiness makes it of value where winter injury is a problem.

† *Jerseyland.* Ripe just a little more than four weeks before Elberta; fruit large, rather pointed shape in some years, dark red all over; flesh firm rather coarse, good flavor and quality, freestone most years; tree vigorous, productive, and hardy.

Oriole. Ripe four weeks before Elberta; fruit medium size, roundish, dull yellow with red streaks and blush; flesh medium firm, smooth, good flavor and quality, semi-cling; tree productive, vigorous, very hardy. While this variety is not so attractive or so freestone as other sorts in its season, it is of value where winters are too cold for more commercially acceptable varieties.

° *Redhaven.* Ripe four weeks before Elberta; fruit medium size, round, attractive red all over; flesh firm, juicy, smooth, pleasant flavor and very good quality, freestone; tree vigorous, productive, and hardy. Redhaven should be thinned early and heavily to get good size. This variety is well suited to freezing because the flesh turns brown slowly on exposure to the air.

Golden Jubilee. Ripe 3½ weeks before Elberta; fruit large, oval, yellow with an attractive blush; flesh juicy, smooth, but not firm enough to handle well, sweet rather strong flavor, good quality, freestone; tree vigorous, pro-

ductive, and hardy. While this variety is now the third most widely planted in the State, the number of new trees being planted is declining.

• *Triogem.* Ripe just a little more than three weeks before Elberta; fruit medium to large, oval, attractive yellow and blush; flesh firm, smooth, juicy, good flavor, very good quality, freestone; tree productive, medium hardy. Triogem is one of the best varieties for freezing, canning, or fresh use.

† *Fairhaven.* Ripe just a little less than three weeks before Elberta; fruit medium size, roundish, bright yellow with blush; flesh firm but slightly coarse, good flavor, and quality, freestone; tree vigorous, productive, and hardy. The flesh oxidizes slowly making it a good variety for freezing.

† *Southland.* Ripe 2½ weeks before Elberta; fruit large, round, highly colored, attractive, flesh firm, slightly coarse, very good flavor, good quality, freestone; tree vigorous, productive, but probably not so hardy as Elberta. A promising commercial variety where there is little danger of winter injury.

† *Golden Globe.* Ripe 2½ weeks before Elberta; fruit large, round, bright yellow with blush; flesh firm, smooth, juicy, good flavor, high quality, freestone; tree vigorous, productive, and medium hardy. Although not so highly colored as many of the newer varieties, it seems worthy of a wide trial.

† *Sunhigh.* Ripe just a little more than two weeks before Elberta; fruit large, oval, highly colored; flesh firm, good flavor, high quality, freestone; tree vigorous, medium hardy. This variety does not set a large number of fruit buds so that while it requires little thinning in good years, the crop is more likely to be reduced by winter injury in severe winters.

• **Halehaven.** Ripe two weeks before Elberta; fruit large, round, highly colored but rather dull; flesh medium firm, fine flavor, high quality, freestone; tree vigorous, productive, and hardy. Halehaven is the second most widely planted variety in the State.

Summercrest. Ripe one week before Elberta; fruit large, oval, yellow and blush; flesh firm, sweet, slightly strong flavor, fair quality, freestone; tree vigorous, productive, and medium hardy. This variety has given variable results in orchards across the State insofar as color and quality are concerned. On more fertile, heavier textured or heavily fertilized soils, color is poor and quality is low. On less fertile soils, color and quality are frequently good. This variety tends to drop badly.

Early Elberta. Many early maturing Elberta types have been introduced. They ripen from 10 to

3 days before Elberta and mostly resemble that variety in appearance and quality. Stark's Early Elberta (3 days before Elberta) is the best of these that has been grown at Geneva.

° **Elberta.** Ripe about September 15 at Geneva; fruit large, oval, yellow and blush; flesh firm, rather strong flavor, fair to good-quality freestone; tree productive, widely adapted, tender to low temperatures. This variety is the leading variety in the whole country as well as in the State. It is not being planted as widely as formerly, however, because of its lack of hardiness, and its ripening season which in western New York is frequently in cool weather so that the variety does not develop its best color and quality.

† *Fowler.* Ripe three days after Elberta; fruit large, oval, yellow and blush; flesh firm, smooth textured, sweet rich flavor, high quality, freestone; tree vigorous, productive, and medium hardy. This variety seems to develop high quality even in this late season.

White-fleshed Peaches

Early White Giant. Ripe six weeks before Elberta; fruit large, round, solid red; flesh firm, slightly coarse, fair flavor, medium quality, semi-clingstone; tree vigorous, productive, and medium hardy. The flavor is not the best but its size, productiveness, and season make it of value for roadside stands.

Erly-Red-Fre. Ripe just a little more than five weeks before Elberta; fruit large, round, attractive; flesh highly colored, firm, smooth, rich flavor, good quality, freestone; tree productive and hardy. A popular early white-fleshed variety.

Raritan Rose. Ripe just under four weeks before Elberta; fruit large, round, attractive, highly colored; flesh firm, slightly fibrous, good flavor and quality, freestone; tree vigorous, productive, medium hardy.

Redrose. Ripe just a little more than two weeks before Elberta; fruit medium size, round, highly colored; flesh fine grained, firm, good flavor and quality, freestone; tree vigorous, productive, and medium hardy.

Champion. Ripe just a little more than a week before Elberta; fruit small, round, rather dull color with slight blush; flesh medium firm, smooth, very fine flavor and quality, freestone; tree vigorous, productive, and hardy. This old variety while not so attractive or large as some of the newer sorts is still the standard of quality for white-fleshed peaches.

Laterose. Ripe one week after Elberta; fruit large to medium, oval, fairly attractive; flesh firm, slightly fibrous, good flavor and quality, freestone; tree vigorous and productive. The best late white-fleshed peach.

Nectarines

NECTARINES are similar to peaches except for the lack of fuzz on the fruit and a pleasant characteristic flavor. They can be grown in most areas where peaches are grown. They are, however, very attractive to plum curculio and other insects and are susceptible to brown rot. Given good control of these pests, nectarines can be grown successfully.

John Rivers. Ripe five weeks before Elberta; fruit small, highly colored; flesh slightly coarse, juicy, white, good flavor and quality, clingstone; tree productive and hardy.

Nectarose. Ripe just a little more than two weeks before Elberta; fruit medium size, roundish, highly colored; flesh firm, juicy, white, rich flavor, good quality, freestone; tree vigorous, productive and hardy.

Garden State. Ripe just a little less than two weeks before Elberta; fruit large, round, attractive, yellow and blush; flesh firm, slightly fibrous, yellow, rich flavor, high quality, freestone; tree vigorous, productive, but not so hardy as Elberta.

Nectacrest. Ripe just a little more than one week before Elberta; fruit large, roundish, highly colored; flesh firm, slightly fibrous, white, good flavor and quality, freestone; tree vigorous, productive and hardy.

Fuzzless Berta. Ripe just after Elberta; fruit large, oval, slightly dull; flesh firm, yellow, slightly strong flavor similar to Elberta, fair to good quality, freestone; tree productive and about as hardy as Elberta. This variety is supposed to be a sport of Elberta and resembles it very much except that it is a nectarine.

Plums

THE European varieties are the most important plums and the most suitable for New York. They are usually much superior to the Japanese varieties in dessert quality, culinary usefulness, and in keeping and shipping quality. The trees are more reliably productive.

Stanley, Italian Prune, and Reine Claude are self-fruitful in New York and are suitable pollinators for other European plum varieties most of which should have suitable pollinators planted with them. The European and Japanese varieties are not suitable pollinators for each other.

The Japanese varieties are red or yellow plums that are inferior in quality and general usefulness to the better European varieties. Most of them ripen earlier which

makes them of value in extending the plum season. They bloom earlier than the European varieties, and the flowers are thus more apt to be injured by spring frosts. They are also biennial bearing.

Cross-pollination should be provided for all Japanese varieties by planting other Japanese varieties with them. Burbank and Shiro do not pollinate each other.

European Varieties

De Montfort. Fruit medium size, roundish oval, dark purple; skin thick, medium tough; flesh greenish, juicy, medium tender, medium firm, mild subacid, good, freestone; tree vigorous, spreading, open, heavy annual bearer. An early heavy yielding variety worthy of trial for home and market.

* **Stanley.** Fruit large, oval or prune-shaped, dark blue with heavy bloom, becoming bluish black when fully ripe; skin medium in thickness and toughness; flesh greenish yellow, moderately juicy, fine-grained, tender, firm, sweet, good, freestone; tree large, vigorous, upright-spreading, open vase-shaped, bearing early and heavy annual crops, unusually resistant to low winter temperatures and to frost while in bloom. Stanley is the best European plum for commercial planting; an unusually heavy and reliable cropper and an attractive good-quality plum. It is good for canning and is preferred by processors of baby foods. Stanley is replacing Italian prune (Fellenberg) by reason of its greater productiveness.

Italian Prune (Fellenberg). Fruit medium size, long oval, purplish black with heavy bloom; skin thin, somewhat tough; flesh greenish yellow, juicy, firm, subacid, very good, freestone; tree medium size, vigorous, spreading or upright, productivity somewhat uncertain, but good under favorable conditions and hardy. Its rich, sprightly flavor and excellence for culinary purposes makes Italian one of the best for home use. It hangs and keeps well. It is being replaced for commercial purposes by Stanley which is more reliably productive.

Reine Claude. Fruit medium size, roundish oval, yellowish green; skin medium thick, tough; flesh golden yellow, juicy, firm, sweet, very good; tree of medium size and vigor, round-topped, productive and hardy. Reine Claude, sometimes known as *Green Gage*, is one of the best of this large group of green or yellow, very sweet, high-quality varieties. It is highly recommended for home use; but as green or yellow plums are less saleable than the purple varieties, it should not be planted extensively for the general market unless there is an assured market for the crop.

Japanese Varieties

Beauty. Fruit medium size, roundish conic, attractive medium red:

skin thick, tough; flesh yellow, very juicy, fibrous, sweet, good, clingstone; tree vigorous, open-spreading, productive with a tendency to biennial bearing, somewhat susceptible to winter injury in cold winters. Useful for home use and for local markets for its earliness.

Shiro. Fruit medium size, roundish conic, light yellow; skin thin, tough; flesh light yellow, very juicy, fibrous, sweet, mild, good; tree large, vigorous, upright-spreading, productive, and hardy. Useful for home use and local markets because of its attractive appearance.

Abundance. Fruit medium size, roundish ovate, medium red; skin thin, tough; flesh yellow, very juicy, tender, sweet, good, clingstone; tree large, vigorous, vase-shaped, productive, annual bearing, and hardy. Suitable for home use and for local markets. Ripens unevenly, necessitating several pickings.

Burbank. Fruit medium size, or large if tree is not overloaded, roundish conic, dark red; skin thin, tough; flesh yellow, juicy, firm, sweet, good, clingstone; tree large, vigorous, low, sprawling, flat open top, very productive in alternate years, one of hardiest Japanese varieties. Severe thinning necessary or fruits will be small. Long the most popular Japanese variety in New York, but useful primarily for home use and for local markets before the better European varieties ripen.

Santa Rosa. Fruit large, roundish conic, very attractive dark purplish crimson; skin medium thick, tough; flesh dark red, juicy, firm, fibrous, good, clingstone; tree large, vigorous, upright, productive, with tendency to light crops in alternate years, hardy in normal winters. A good commercial variety because of its large size, attractive appearance and good handling qualities.

Japanese-American Plum Hybrids

Many hybrids between the Japanese and American plum species have been developed by the Minnesota and South Dakota Experiment Stations. They are much superior to the native American plums in size and quality. They equal the Japanese varieties in size, and the best are nearly as good in quality. They are also much hardier than the Japanese varieties. Their usefulness in New York is limited to the coldest parts of the State where the Japanese and European varieties are not winter-hardy.

Among these hybrid varieties are Underwood and Monitor. They are uncertain pollinators for each other. The varieties, Surprise, Kaga, Toka and South Dakota are suitable pollinators for the Japanese-American hybrids.

Damson Varieties

The Damson varieties are small, purplish, tart plums that are excellent for jam, jelly, and plum butter, but of no value for dessert. The trees are very productive and very hardy, and the fruits are not susceptible to brown rot. The market for Damsons is limited, so extensive plantings should not be made unless there is a known market for the crop.

A number of varieties are available from nurseries. Shropshire is more generally available than the others, but French Damson is larger and desirable.

Shropshire. Fruit small, oval, purplish black with a heavy bloom; skin thin, tender; flesh yellow, juicy, firm, tender, tart, pleasant, clingstone; tree large, vigorous, vase-shaped, bearing heavy annual crops, very hardy. Excellent for jam and jelly.

Cherries

Sweet Cherries

All varieties of sweet cherries are self-unfruitful necessitating provision for cross-pollination. Two or more varieties must be planted together. Most varieties successfully cross-pollinate each other. Napoleon and Emperor Francis will not pollinate each other and must be planted with some other variety to insure a crop. Cherries are budded either on Mazzard or Mahaleb rootstocks. Trees on Mahaleb stocks are somewhat dwarfed in growth habit. In permanent commercial plantings, sweet cherries budded on Mazzard roots usually give the most satisfactory performance. Trees on Mazzard may be more expensive but they develop into a larger size, they are more productive, and they are more tolerant of wet soils than trees on Mahaleb roots. Viruses may cause erratic cropping in certain varieties such as Schmidt. Virus-free trees should be purchased when they are obtainable.

Varieties are listed in order of fruit-ripening dates, covering a period of about three and one-half weeks in late June and early July.

† *Early Rivers.* Fruit medium to large, deep dark red becoming crimson black, attractive; flesh medium firm, firmer than Black Tartarian, sweet, aromatic, quality good; skin thin, tender, does not crack; stone very small; tree large, vigorous, upright-spreading, hardy, very productive. Early Rivers is one of the best early sweet cherry varieties but because of its earliness it is very susceptible to destruction by birds; few varieties exceed it in productivity.

† *Victor.* Fruit large, light yellow

ground color well covered with lively red, attractive; flesh medium firm, flavor less sweet than most varieties, excellent quality; skin does not crack; tree large, vigorous, upright, hardy, and productive.

° *Emperor Francis.* Fruit large, bright red over yellow, with dark red cheek, quite attractive; flesh firm, juicy, sweet, richly aromatic, excellent quality; skin does not crack; tree medium to large size, moderately vigorous, upright-spreading, hardy, and productive. Compared with Napoleon, Emperor Francis is better in quality, darker in color, and less susceptible to cracking and brown rot. Emperor Francis is receiving considerable attention in commercial cherry sections.

° **Schmidt.** Fruit large, black, attractive; flesh firm, richly sweet; best quality; skin cracking is not a problem; tree large, moderately vigorous, upright-spreading, moderately hardy, productivity somewhat erratic. Schmidt is one of the standard midseason cherries.

Gil Peck. Fruit large, purplish black, attractive; flesh firm, juicy, sweet, rich, quality very good; skin cracks in rainy seasons; tree large, vigorous, upright-spreading, hardy, and productive.

Yellow Spanish. Fruit medium to large, light yellow with red cheek, attractive; flesh firm, sweet, good quality; skin does not crack; tree large, very vigorous, upright-spreading, hardy, and productive.

Napoleon. Fruit large, bright red cheek over yellowish background, attractive but bruises are conspicuous; flesh firm, sweet, good quality; skin cracks in rainy seasons; susceptible to brown rot; tree large, vigorous, upright-spreading, below average in hardiness, and very productive. Maraschino type; Royal Anne of the West Coast.

Noble. Fruit large, reddish black, medium attractive; flesh very firm, sweet, fair to good quality, skin usually does not crack; tree very large, very vigorous, upright-spreading, and only moderately hardy.

† *Hedelfingen.* Fruit large, black, attractive; flesh firm, sweet and of very good quality; more resistant to cracking than most varieties; tree large, very vigorous, upright-spreading, hardy, and productive. Hedelfingen has performed very satisfactorily in commercial plantings.

Windsor. Fruit large, liver-colored, moderately attractive; flesh firm, crisp, sweet, and of good quality; skin does not crack seriously; tree large, vigorous, upright-spreading, hardy, and very productive. Windsor is the standard late sweet cherry; it is the most widely grown variety in New York.

Duke Cherries

Duke cherries are intermediate between sweet and sour cherries. They require cross-pollination; any sweet or sour variety is a satisfactory pollinator, provided the blooming period is the same. Reine Hortense is a large, midseason variety; Royal Duke is dark and late midseason.

Sour Cherries

Sour-cherry varieties are self-fruitful; they do not require cross-pollination. Viruses reduce the yield of sour cherries; therefore, only trees that are virus-free should be planted. Mahaleb rootstocks are satisfactory for sour cherries grown on good cherry soils.

* **Montmorency.** Fruit large, medium red, attractive; flesh rather firm, tart, and of very good quality; skin does not crack; tree medium to large size, vigorous, spreading, hardy, and uniformly productive. Leading sour cherry in New York.

English Morello. Fruit medium size, dark reddish black, only moderately attractive, juice colored; flesh moderately firm, tart, of excellent quality in cooking; skin does not crack; tree small, vigorous, drooping, hardy, and very productive. The standard late morello cherry in New York.

Quince

Orange (Apple). Large, roundish, tender when cooked, with excellent flavor; tree sturdy, very productive; the standard quince.

Grapes

Commercially Important Varieties

CONCORD is the leading commercial variety in New York State, comprising more than 85 per cent of the total production. The remaining acreage is made up largely of Catawba, Niagara, Delaware, Elvira, and Fredonia, in the order mentioned. These are described below in order of ripening. In making new plantings, special attention should be given to the market outlet for the variety.

Fredonia. Vigorous, productive black grape in season two weeks before Concord. Should be pruned less severely than Concord; fruit is susceptible to mildew.

Delaware. Considered by many the highest quality American table and white wine grape. Berries small, red; clusters small; foliage susceptible to mildew; vines may lack vigor on own roots; requires good site and

management; under these conditions yields may compare to those of Concord.

Niagara. A standard white grape in season shortly before Concord, sweet, foxy. Declining demand as fresh fruit and for wine; only moderately hardy and moderately susceptible to major grape diseases.

Elvira. An old white variety in limited demand for wine. In season with Concord. Vines are vigorous, hardy, and productive; berries crack readily.

* **Concord.** The variety upon which is based the unfermented juice and jelly industry of the country; it is also used in quantity for dessert wines in the East. Vigorous and productive under varied soil and climatic conditions. Fruit black, of characteristic flavor, foxy, ripening near the end of the growing season in most areas of the State.

Catawba. A standard red grape used for white wines, ripening too late for many parts of the State; of importance in the Finger Lakes section only. Vines vigorous, hardy, productive but susceptible to fungus diseases.

Other Varieties for the Home Vineyard and Roadside Market

For the home vineyard and the roadside market a collection of varieties, as listed below, ripening from early to late season, provide fruit over a period of about eight weeks. Those varieties described as European type have fruit characters more like the "non-slipskin" European than the native American grapes. Many of these varieties are not so hardy as Concord, but can be grown in the commercial grape areas without winter protection.

Interlaken Seedless. White, very early seedless grape, clusters are medium; berries are small; flesh sweet, meaty and crisp, of good quality; extremely low temperatures may injure the wood.

Himrod. Seedless. White, sister of Interlaken, ripens slightly later; clusters large, loose; berries medium, sweet, and of good quality.

Schuyler. Black, very early; European type, of good quality; vine moderately hardy; requires short pruning to prevent overbearing.

Van Buren. The most promising early Concord type for roadside market; ripens three weeks before Concord; flower clusters and fruit very susceptible to downy mildew.

Portland. Amber, very early; moderately vigorous and productive; flavor somewhat foxy.

Ontario. Best very early, greenish-white, American type grape; vines vigorous, productive, and quite hardy.

Seneca. White, early European type of highest dessert quality; texture firm and tender; susceptible to mildew and requires spraying.

Kendaia. Black, early Concord type; vines vigorous and very productive; clusters attractive.

† *Buffalo.* Black, midseason, highest dessert quality; clusters somewhat loose; vines vigorous and productive; merits extensive trial.

Bath. Black, attractive; vigorous and very productive; must be severely pruned to prevent overcropping.

† *Romulus.* Seedless. White, midseason; vine vigorous and productive; clusters large compact; berries small, sweet, good; most promising New York seedless introduction.

Concord Seedless. A sport of Concord with its typical flavor; berries small, seedless except in exceptional seasons when a few seeds may be found; less productive than parent; prized for pies and jam.

Varieties Ripening After Concord

† *Steuben.* Bluish black, handsome; clusters large and compact; quality high; sweet with spicy tang; vines vigorous, hardy, and productive; highly recommended for extensive trial; keeps well in storage.

Naples. Attractive red, seedling with Delaware parentage; flavor and quality of parent; ripens two weeks later; productive; must be pruned severely.

Yates. Red, promising, late-keeping sort of high quality; clusters large and medium compact.

Sheridan. Black, late, Concord type; vine vigorous and productive.

Golden Muscat. Golden yellow; clusters very large; vigorous grower; requires season about two weeks longer than Concord to ripen.

Varieties for Wine

Some varieties are especially suited for wine making and many of these have little if any other outlet at the present time. Our most important varieties used for white wine are Catawba, Delaware, Elvira, and Niagara. Other less important varieties in terms of acreage of plantings are Dutchess and Iona.

Varieties that are used for red wine and that have little other market outlet are Ives, Isabella, and Clinton. All of these may be used in blends to add color.

In recent years there has been increasing interest in the French hybrid grapes. These have been introduced by French grape breeders who produced them by crossing the European varieties with certain wild American species. Most of them are suitable for wine or juice but are lacking in dessert quality; some of them do have table quality.

The French hybrids carry the names of the breeders who introduced them. The numbers listed have been found to mature early enough for the grape areas of New York and have shown some promise in preliminary trials. The follow-

ing and many others are of interest for white wine: Seibel 1000, Seibel 5279, Seibel 9110, Seibel 10868, Seibel 13047 and Seyve-Villard 5-276. For a red wine these may be tried: Baco No. 1, Seibel 5437, Seibel 10878 and Seibel 13053. More detailed information about the French hybrids may be obtained from the New York State Agricultural Experiment Station at Geneva.

Strawberries

VIRUS-FREE plants of many strawberry varieties are now available and are preferable to plants of unknown virus-content. Virus-free plants should be used when available.

* **Howard (Premier).** Large, long conic, attractive, glossy, medium red; skin tender; flesh soft, fair; calyx bright green; plants vigorous, hardy, productive, suited to a wide range of soils and climate; flowers frost-resistant. Extensively grown for many years, but now being replaced by newer and better varieties. Fruit may rot badly in wet weather.

* **Catskill.** Very large, somewhat irregular, roundish wedge, attractive, glossy medium red; skin somewhat tender; flesh only medium firm, good; plants vigorous, very productive, hardy, and healthy; flowers less frost-resistant than Howard; plants seriously injured when virus-infected, hence only virus-free plants should be planted. Extensively grown as a market variety because of its heavy crops and large berries.

Fairland. Large, wedge-conic to blunt wedge-conic, attractive, glossy, medium red, moderately tough skin, good; plants vigorous, productive, resistant to red stele. A good market variety.

† *Empire.* Very large, round-conic to roundish wedge-conic, very glossy medium red; skin medium tough; flesh light red, good; calyx large and bright; plants vigorous and productive. Promising new variety for trial for market and home use because of its productiveness and unusually attractive appearance.

Fairfax. Large, roundish wedge-conic, dark red, glossy, attractive if not dead ripe; skin tough; flesh firm, sweet and very good; plants vigorous, only moderately productive. One of best for home use, but not productive enough for market.

† *Eden.* Large, conic, dark red, but glossy and attractive; skin tough; flesh firm, red, tart, and of fair quality; plants vigorous and productive. One of best for freezing, also suitable for preserving and canning. Caps easily.

† *Erie.* Large, conic, medium red, glossy, attractive; skin medium tough; flesh light red, medium

firm, and of fair quality; plants vigorous and very productive. Suggested for trial for market.

Robinson. Large to very large, wedge-conic, irregular, furrowed, green-tipped, light to medium red; skin tender; flesh soft and of fair quality; plants vigorous, producing too many runners, and productive. Robinson performs much better on sandy soils than on heavy soils.

° **Sparkle.** Medium size or larger, wedge-conic to conic, medium red, glossy, attractive, becoming dark if overripe; skin tough; flesh firm and good; plants vigorous, producing too many runners under good growing conditions, and productive. Standard and reliable variety; one of best for freezing. Runner thinning is desirable to prevent overcrowding.

Everbearing

Gem (Superfection, Brilliant). Medium to large, oblate to wedge-conic, medium red; skin medium tough; flesh tender, acid, and of fair quality; plants vigorous for an everbearer, productive if grown in hills and mulched with sawdust.

Raspberries

Red

† *September.* Medium size, roundish, bright red, firm; quality is fair in summer, good in fall; plants vigorous, hardy, productive, usually escaping mosaic. Produces a fall crop in addition to the summer crop. The best autumn-fruiting or so-called everbearing variety; also suitable for the summer crop. The berries pick hard if not fully ripe.

° **Newburgh.** Very large, roundish, usually bright red, occasionally somewhat dull; flesh very firm, mild, and of good quality; plants vigorous, hardy, of medium height, very productive, usually escaping mosaic. A standard and reliable variety.

° **Latham.** Large, roundish, medium red, moderately firm, inclined to crumble; flesh mild and of fair quality; plants vigorous, upright, and productive. One of hardiest, susceptible to mildew, somewhat tolerant of mosaic which may spread rapidly. Long a standard variety, but useful primarily where better varieties winterkill.

° **Taylor.** Large, long-conic, medium red, bright, attractive; flesh firm and of good quality; plants vigorous, upright, sturdy, hardy, and productive. Subject to mosaic, but with distinct symptoms which facilitate rogueing. A good variety for market and home use.

† *Milton.* Large, long-conic, medium red; flesh firm and of good quality; plants vigorous, moder-

ately hardy, productive, escaping mosaic. A good variety especially useful where mosaic spreads rapidly.

Amber. Large, long-conic, slightly irregular, amber in color; flesh tender, sweet, and of very good quality; plants very tall, vigorous, hardy, and productive. An interesting novelty for the home garden because of its high quality and amber color.

Black

Shuttleworth. Medium size, roundish, glossy black, attractive; flesh firm and of good quality; plants above medium size, vigorous, productive, and moderately tolerant of green mottle mosaic. Useful as an early variety.

* **Logan.** Medium size, roundish, glossy black; flesh firm and of good quality; plants medium in vigor and productive.

* **Bristol.** Large, roundish conic, glossy black; flesh firm and of good quality; plants tall, vigorous, very productive, somewhat tolerant of mosaic. An excellent variety for market and home use.

* **Dundee.** Large to very large, roundish conic, glossy black; flesh firm and of very good quality; plants tall, vigorous, productive, somewhat tolerant of green mottle mosaic with indistinct symptoms. Somewhat susceptible to mildew. A good variety for market or home use.

Cumberland. Large conic, glossy black; flesh firm, sweet, rich, best in quality. Plants vigorous, productive, susceptible to anthracnose and all of the virus diseases. It is declining in importance, but is still one of the better varieties.

Purple

* **Sodus.** Large, roundish conic, medium purple; flesh firm, not crumbling, tart, and of good quality; plants very vigorous with growth habit of black raspberry and propagating by tip layering, very productive, hardy, susceptible to mosaic, with distinct symptoms. One of best purple varieties for market and home use, and for canning and jam.

* **Marion.** Very large, roundish conic, medium purple, flesh firm, tart, and of good quality; plants vigorous, very productive, hardy, propagating by tip layering and very sparingly by suckers. An unusually large, productive variety, ripening a few days later than Sodus.

Blackberries

Hedrick. Large, irregular, medium long, cylindrical, glossy black; flesh medium firm, core soft, juicy, sprightly, and of good quality; plants tall, vigorous, upright, hardy, productive, susceptible to orange rust necessitating control measures of removal and

destruction of infected plants.

† *Bailey.* Large, slightly irregular, long, cylindrical, glossy black; flesh medium firm, soft core, juicy, subacid, and of good quality; plants tall, vigorous, upright, hardy, and productive. Bailey ripens a few days later than Hedrick and is a promising new variety for trial.

Dewberries

Lucretia. Large, glossy black, long cylindrical, flesh firm, tart, and of good quality; plants vigorous, trailing, necessitating support, productive, not fully hardy in New York. Dewberries are of doubtful value commercially in New York, but may be grown in gardens if winter protected.

Currants

°**Wilder.** Clusters long and well-filled on severely pruned bushes; berries large, roundish oblate, dark red; skin thin and tender; flesh firm, pleasantly subacid and of good quality; plants large, vigorous, upright to slightly spreading, productive, and long-lived. Long a standard commercial variety. More productive than Red Lake on less fertile soils.

°**Red Lake.** Clusters long, well-filled; berries uniformly large, round, glossy medium red; skin medium in thickness and toughness; flesh tender, sprightly, and of very good quality; plants medium size, vigorous, spreading, and productive. The long cluster stems facilitate picking. A good reliable variety for market and the home garden. It is especially suitable for very fertile sites as the plants are less vigorous than Wilder.

Gooseberries

Poorman. Large, attractive, pinkish red, oval; skin smooth, rather tough; flesh tender, sprightly becoming sweet when dead ripe, and of very good quality; plants larger and more vigorous than other varieties, upright to spreading, and productive. The best variety, especially for home use, because of its quality, vigor and freedom from disease.

Downing. Medium size, roundish oval, silvery green; skin smooth, thin, and tough; flesh tender, sweet, and of very good quality; plants vigorous, upright spreading, rather dense, and very productive. The best green-fruited variety.

English Varieties

English varieties are susceptible to mildew necessitating careful spraying. They are less productive and less vigorous than the American types and offer no advantage except larger berry size. They are now rarely sold by nurseries. Chautauqua (green) and Fredonia (red) are the best of the English varieties.

Elderberries

Adams. Berries and clusters larger than the wild types. For pollination, it is necessary to plant both the green-stemmed and red-stemmed clones or have wild elderberries nearby.

Blueberries

BLUEBERRIES have special soil requirements and are not suited to so wide a range of soils as are the other fruits. Soils for blueberries should be sandy, or loose textured, well-supplied with organic matter, moist, and *acid*. Blueberry plants grow best on soils with a pH test between 4.4 and 5.1 although fair results may be obtained if the pH is somewhat higher, particularly if the plants are fertilized with sulfate of ammonia and mulched with sawdust. If blueberries do not grow naturally in the soil intended for them, the soil should be tested.

Blueberries fruit fairly well without cross-pollination but the berries are larger when cross-pollination is provided. So far as is known, any two varieties will pollinate each other.

The varieties recommended are very new, but they are so superior to the older sorts that they should be planted in preference to them. These newer varieties are available from firms specializing in the production of blueberry plants.

Older varieties that are still being sold, but that are inferior to the newer sorts are Weymouth, June, Cabot, Pioneer, Rancocas, Concord, Stanley, Rubel, and Burlington.

†*Earliblue*. Fruit large, oblate, light blue; flesh very firm, subacid, and of good quality; scar average; fruit cluster medium size and medium loose; bush vigorous, upright, productive. Superior in every respect to the other very early varieties.

†*Bluecrop*. Fruit large, roundish oblate, very light blue; flesh very firm, subacid, and of good quality; scar small; fruit cluster large, medium loose; bush vigorous, upright, productive to point of overbearing, requiring more severe pruning to reduce the crop. A promising new midseason variety.

†*Berkeley.* Largest of all named varieties; fruit oblate, light blue; flesh firm, mild subacid, and of good quality; scar small, tears occasionally; fruit cluster large, medium loose; bush very vigorous, open-spreading, and productive. A promising new variety.

Atlantic. Fruit large, oblate, 5-sided, light blue; flesh firm, acid until fully ripe, and of good quality; scar small, not tearing; fruit cluster medium size, loose; bush very vigorous, open-spreading, and very productive. A good market variety.

Pemberton. Fruit large, oblate, medium blue; firm, mild subacid, and of good quality; scar large, tearing easily; fruit cluster large, loose; bush very vigorous, upright, and very productive. Suitable for home use and for local markets where fruit is to be used promptly. Tearing of scar reduces keeping quality and makes the fruit variety unsuitable for shipping to distant markets.

Rubel. Fruit below medium size, oblate, light blue; flesh firm, subacid, and of fair quality; scar medium size, not tearing; fruit cluster loose; bush vigorous, upright, productive, and hardier than most varieties. Small size of berries makes it a good plant to have in the home garden for blueberry muffins, for which purpose the large berries of the other varieties are less suitable. For other purposes, the larger-fruited varieties are much superior.

Herbert. Fruit one of largest, oblate, medium blue; flesh firm, subacid, one of best in quality; scar fair; fruit cluster large and loose; bush vigorous, upright spreading, and productive. Promising new variety for its size, firmness, quality, and productivity.

°*Jersey.* Fruit large, roundish oblate, light blue; flesh firm, acid until fully ripe, and of good quality; scar large, not tearing; fruit cluster large, very loose; bush very vigorous, upright, very productive, hardier than most varieties. Best of the older varieties for commercial planting, but may eventually be superseded by the newest sorts.

Dixi. Fruit very large, oblate 5-sided, medium blue; flesh firm, subacid, and of good quality; scar large, not tearing; fruit cluster medium loose; bush vigorous, open-spreading, moderately productive, less hardy than others but hardy enough for most winters. Suitable for home use because of large size and good quality.

†*Coville.* Fruit very large, oblate, light blue; flesh firm, acid, and of good quality; scar medium size, tearing occasionally; fruit cluster large, medium loose; bush vigorous to very vigorous, open-spreading, and productive. A promising new variety that is latest of all to ripen.

Nuts

THE commercial planting of nuts is not recommended for New York. Their planting, however, is to be encouraged as a hobby, for shade, for home use, and for odd corners around the farmstead. Named varieties should be planted instead of seedlings wherever suitable sorts are available. Usually these can be obtained only from nurserymen specializing in nut trees. As yet, knowledge of varieties and their adaptation to different parts of the State is inadequate. The following are some of the more promising kinds. A more complete discussion of northern nut growing is to be found in Cornell Extension Bulletin 701, *Nut Growing*.

Filberts

All varieties of filberts require cross-pollination, hence two or three varieties at least should be planted, and one or two of these sorts should have hardy catkins.

Cosford. Nut medium size, thin-shelled, pointed. Tree vigorous, hardy, and productive. Catkins hardy.

Medium Long. Nut medium size, with medium thick shell, pointed. Tree vigorous, hardy, and productive. Catkins moderately hardy.

Italian Red. Nut large, pointed, with medium thick shell, good in quality; tree very vigorous and one of the most productive; catkins moderately hardy.

Some hybrid American-European varieties are promising for northern planting. Bixby, Buchanan, and Potomac are available from nurserymen.

Black Walnuts

The *Thomas* has given by far the best results in New York of any varieties tested and can be obtained from nurserymen. The *Stabler* and *Ohio* have been relatively less successful. Many other varieties of black walnuts have been named and some have been propagated but have not been sufficiently tested in the North to be sure of their success. In general, only varieties of northern origin should be planted in New York. Among these are *Snyder, Wiard, Cochran,* and *Sparrow*. These are not in the trade generally at present. It is possible to plant seedling trees in their permanent locations and then to top-work them to northern varieties. Trees, and cions of some varieties, may be purchased from nurseries specializing in nut trees. A list of these nurseries may be obtained from the New York State Agricultural Experiment Station at Geneva, New York.

English or Persian Walnuts

Persian walnuts of the older varieties occasionally have been dam-

aged or killed by low temperatures in New York. At present the most promising strains for northern planting are the so-called Carpathian walnuts from Poland. These have not been tested thoroughly, but young trees have withstood temperatures of −30°F. in North America, and the parent trees have in some cases survived temperatures of −40°F. Only seedlings are available in quantity. Superior selections named are the *Metcalfe, Colby, McKinster,* and *Littlepage* available in a few nurseries.

Japanese Walnuts

Of the Japanese walnuts, the heart nuts are the most promising but are of variable hardiness. The Lancaster has not been hardy at Ithaca. The *Bates,* the *Fodermeier,* and the *Ritchie* are in the trade and may be suitable for northern planting. Their hardiness has not been established.

Northern Pecans

None of the varieties in the trade has produced satisfactory crops in the North because of relatively short growing season and lack of summer heat. The trees are hardy and are good for shade.

Butternuts

Some named varieties of superior cracking quality are the *Kenworthy, Craxezy, Johnson,* and *Van Der Poppen.* These are available from a few nurseries.

Hickories

Hickory trees are relatively slow growing and difficult to transplant. Only varieties of northern origin should be planted. Among the more promising are the *Wilcox,* the *Davis,* the *Glover,* and the *Fox.* Other varieties are being propagated in a small way by nurserymen but have not been adequately tested in New York. Hickory hybrids grow rapidly and make good shade trees but are usually not outstanding in the quality and quantity of nuts produced. Among these hybrids available from nurserymen are the *Burlington* and the *Fairbanks.*

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